

REMARKS/ARGUMENTS

Claims 1-14 are pending in the present application.

Claim 1 has been amended for minor editorial purposes, and to recite additional structural and property aspects of B). Claims 2-5 have been amended for minor editorial purposes. Claims 11-14 have been added.

Support for the amendments to claim 1 and new claims 11-14 can be found throughout the specification, e.g., at page 8, line 35 to page 9, line 12, and the claims, as originally filed.

No new matter has been added.

Reconsideration of the pending claims of the present application is requested in view of the following remarks.

Rejection under 35 U.S.C. § 103

The rejection of claims 1-10 under 35 U.S.C. § 103(a) as obvious over Gareiss et al. (U.S. Patent No. 5,712,336) in view of Davis et al. (GB 2,324,797) is respectfully traversed in view of the above-discussed amendments and reasons discussed below.

Gareiss et al. and Davis et al., alone or in combination, do not describe or suggest the claimed combination of the *thermoplastic polyester and highly branched or hyperbranched polycarbonate*, as presently amended.

As an initial matter, Applicants point out that an obviousness analysis under 35 U.S.C. § 103 requires, *inter alia*, consideration of the differences between prior art references and the claims at issue. *See KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007) (“KSR”) (citing *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 86 S.Ct. 684 (1966) (“*Graham*”) (describing factors that control an obviousness inquiry). In *Graham*, the U.S. Supreme Court (“Court”) set forth the framework for applying the statutory language of 35 U.S.C. § 103, and in *KSR* the Court determined that the *Graham* factors were still useful and provided “helpful insight” to an obviousness inquiry. *KSR*, 127 S. Ct. at 1741. The Court further indicated that a “teaching, suggestion, motivation” to combine need not be explicit in every case. *Id.* (referring to a mechanical device application, in which the Court determined that merely adding a previously existing sensor for detecting pedal movement to a previously existing adjustable throttle pedal was not inventive).

However, in making its obviousness determination, the Court indicated the importance of identifying a “reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Takeda Chem. Indus., v. Alphapharm Pty. Ltd.*, 492 F.3d 1350, 1356-57 (Fed. Cir. 2007) (“*Takeda*”) (quoting *KSR*, 127 S. Ct. at 1731). In the chemical case *Takeda*, the U.S. Court of Appeals for the Federal Circuit (“Federal Circuit”) concurred with the Court’s reasoning by also emphasizing that “it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish *prima facie* obviousness of a new claimed compound.” *Takeda*, 492 F.3d at 1357.

In the present case, the Office has not demonstrated that there would be any apparent reason to modify the references, or provided a reason that one skilled in the art would have been led to combine the references to achieve the claimed composition.

As appreciated and acknowledged by the Office, Gareiss et al. is at least deficient regarding the claimed highly branched or hyperbranched polycarbonate. Applicants note that Gareiss et al. generally describes, *inter alia*, “thermoplastic polyesters.” For instance, Gareiss et al. describes an entire composition relating to flameproofed thermoplastic molding materials, in which the main material is a thermoplastic polyester. However, there is no such description or suggestion of modifying the reference, with any expected benefit, to include a highly branched or hyperbranched polycarbonate. According to the reference, the objects and benefits of the composition, e.g., improved flameproofing properties, are achieved based on the combination of components A) to E), excluding any highly branched or hyperbranched polycarbonate. Proof of these results are also shown in the examples of the reference, beginning at column 10.

Regarding Davis et al., the Office asserts that it would be obvious/one would be motivated to modify Gareiss et al. based on the general disclosure of hyperbranched polycarbonates in the Abstract of Davis et al. However, Applicants point out that such hyperbranched polycarbonates are entirely different from and clearly unobvious over the claimed invention, even if combined with Gareiss et al. In particular, as discussed in the present specification regarding WO 98/50453 (the International Publication of Davis et al.),

[i]n the process described in that specification, triols are again reacted with carbonylbisimidazole. Initially imidazolides are produced, and these then undergo a further intermolecular reaction to give the polycarbonates. In the method mentioned, the polycarbonates are produced in the form of colorless or pale yellow *rubber-like* products.

The syntheses mentioned giving highly branched or hyperbranched polycarbonates have the following disadvantages:

- a) the hyperbranched products are either high-melting or else rubber-like, and this markedly restricts subsequent processibility.
- b) imidazole liberated during the reaction has to be removed from the reaction mixture by a complicated process.
- c) the reaction products always contain terminal imidazolidine groups. These groups are labile and have to be converted by way of a subsequent step into hydroxy groups, for example.
- d) carbonyldiimidazole is a comparatively expensive chemical which greatly increases raw material costs.

Present specification at page 2, line 39 to page 3, line 15 (Emphasis added).

As such, one would clearly not look to or rely on the disclosure of Davis et al. for modification with Gareiss et al. to achieve the claimed invention.

By contrast, the presently claimed invention provides a thermoplastic polyester molding compositions, in which the highly branched or hyperbranched polycarbonates are obtainable by a low-cost simple industrial process. The claimed composition has good flowability together with good mechanical properties.

Furthermore, the resulting highly branched or hyperbranched polycarbonates structures can easily be adapted to the requirements of the application within thermoplastics, and their defined structure can give them a combination of advantageous properties, such as high functionality, high reactivity, low viscosity, and good solubility. In particular, as shown in amended claim 1, the highly branched or hyperbranched polycarbonate structurally have an *OH number of from 1 to 600 mg KOH/g of polycarbonate (to DIN 53240, Part 2), a degree of branching from 10 to 99.9%, and both structural and molecular non-uniformity.*

Applicants also direct the Office's attention to the results achieved by compositions of

the claimed invention, which include the above-described highly branched or hyperbranched polycarbonates. For instance, as described in the Examples of the specification, at pages 28 to 33 (Tables 1 to 5), several improved flowability results are obtained by use of these polycarbonates, as compared to thermoplastic mold compositions that do not contain them.

In view of the above, Applicants submit that the claimed invention is unobvious over the references of record. Accordingly, withdrawal of the rejection is requested.

Provisional Double Patenting Rejections

Applicants acknowledge the Office's indication of several provisional nonstatutory obviousness-type double patenting rejections over claims 1-10, as indicated on pages 4 to 20 of the present Office Action. Applicants request that the rejections be held in abeyance until allowable subject matter is indicated.

In view of the forgoing, consideration and allowance are respectfully solicited.

In the event the Examiner believes an additional interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 03-2775.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 03-2775, under Order No. 12810-00334-US from which the undersigned is authorized to draw.

Dated: April 13, 2009

Respectfully submitted,

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